Andrea González Fàbregas

Architecture Portfolio

CONTENTS

SELECTED ACADEMIC PROJECTS

0.0
ANDREA GONZÁLEZ FÀBREGAS

PRESENTATION TEXT

I have been lucky enough to have the chance to travel a lot throughout my life and to live in different countries, learning form each and every culture and place while always keeping my roots clear.
I'm made out of each of every experience I've gone through and every landscape I've been at, what has allowed my vision of architecture and the world to constantly change and grow, building myself brick by brick.

I've always been attracted to discover new things. Physically and mentally unable to stay sit for more than a few hours, I'm always searching for things to try, do and learn. Maybe that's the reason I've had so many hobbies through my student years.
Starting with painting I've always had a great passion for **art**. Moving myself through different technics, which I have discovered had a lot to do with the moment of my life I was at, I have experimented with pencil, ink pens, colors, oil painting, acrylics and watercolors, finally giving spot to digital art.
As long as my world has gotten bigger, I've also challenged myself with photography, and although I've found impossible to reflect accurately the beauty of some landscapes and communities with my camera, I think I have been able to at least be able to frame part of it, and even more important, what it meant for me.

When it comes to defining myself I know which two things have modeled me throughout my life: Travelling and playing **Rugby**. Although it's far away from the delicate world of art, what has been my passion for so many years and has raised so many challenges and opportunities to me has been the sport I've been playing during the last 8 years.
Learning to combine my sporting life with my architecture studies hasn't always been easy, it started as one of the biggest challenges I've had to go through during my studies, but as time was going through I learned that not only it helped me to organize myself, but It actually has become one of the reasons I've been able to become an architect in the first place. Rugby has taught me the core values of teamwork, commitment and sacrifice and it has given me many opportunities that I wouldn't have had otherwise.

Being my newest challenge to become the coach of the Sub 10 rugby team of my club, I can't stop getting surprised by the incredible values that this sport transmits to it's players no matter their size or age, and how much I keep learning from this kids and their way of living the sport, friendship and life. Sometimes I even doubt if I need their lessons more than they need mine.

Knowing our world, understanding it and wanting to preserve it I think are some basic concerns that architects need to have. Architecture is a key to improvement that we need to use wisely, and to do so **travelling** and discovering, wanting to know, curiosity and self-consciousness are indispensible.
Thanks to these studies I've been able to study in three different universities, in three different countries, each one of them offering me a completely different focus on architecture. ETSAV, in Barcelona, has showed me the social and technical part, at the University of Illinois at Urbana-Champaign I learned the economical and innovative secrets of it, and in the University of Aalborg, in Denmark, the importance of choosing more efficient and sustainable ways of building. I try to apply each one of these lessons In every project and every though, always with one main objective in my head: let's make architecture that matters, architecture that helps.

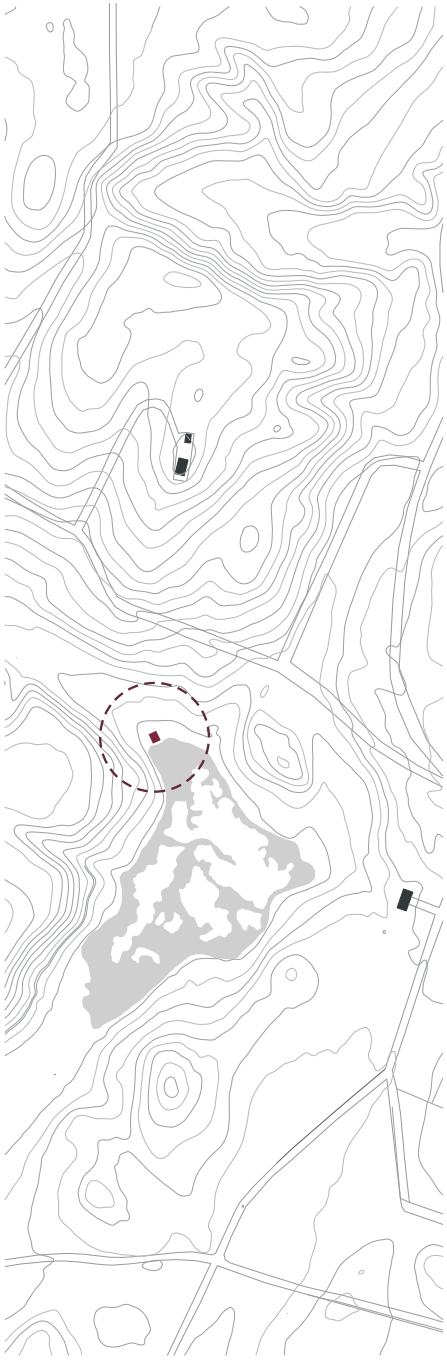
0.1
MOSEHYTTEN

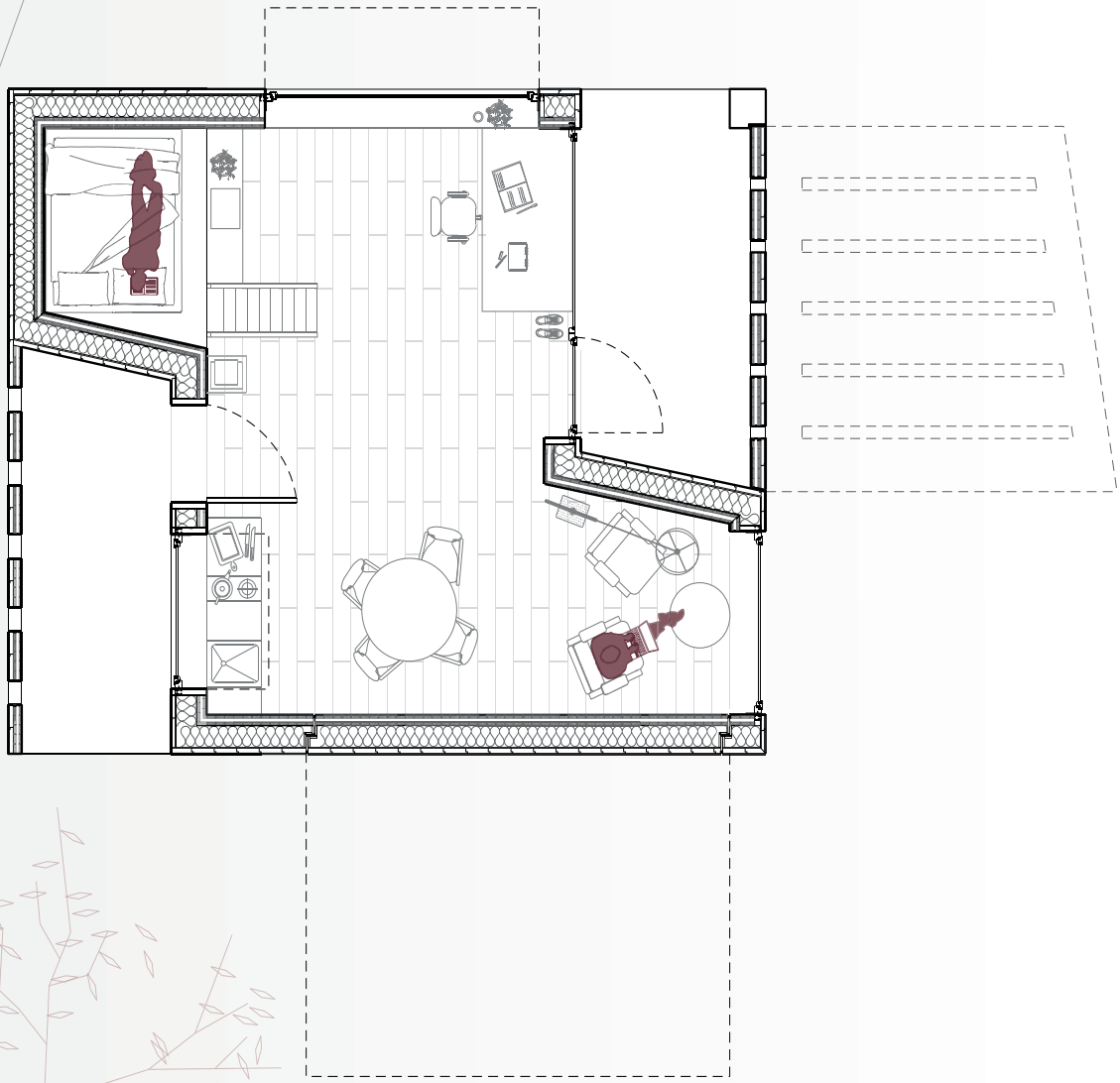
AALBORG UNIVERSITY
DENMARK
Exchange program
1 month project

SUSTAINABLE ARCHITECTURE

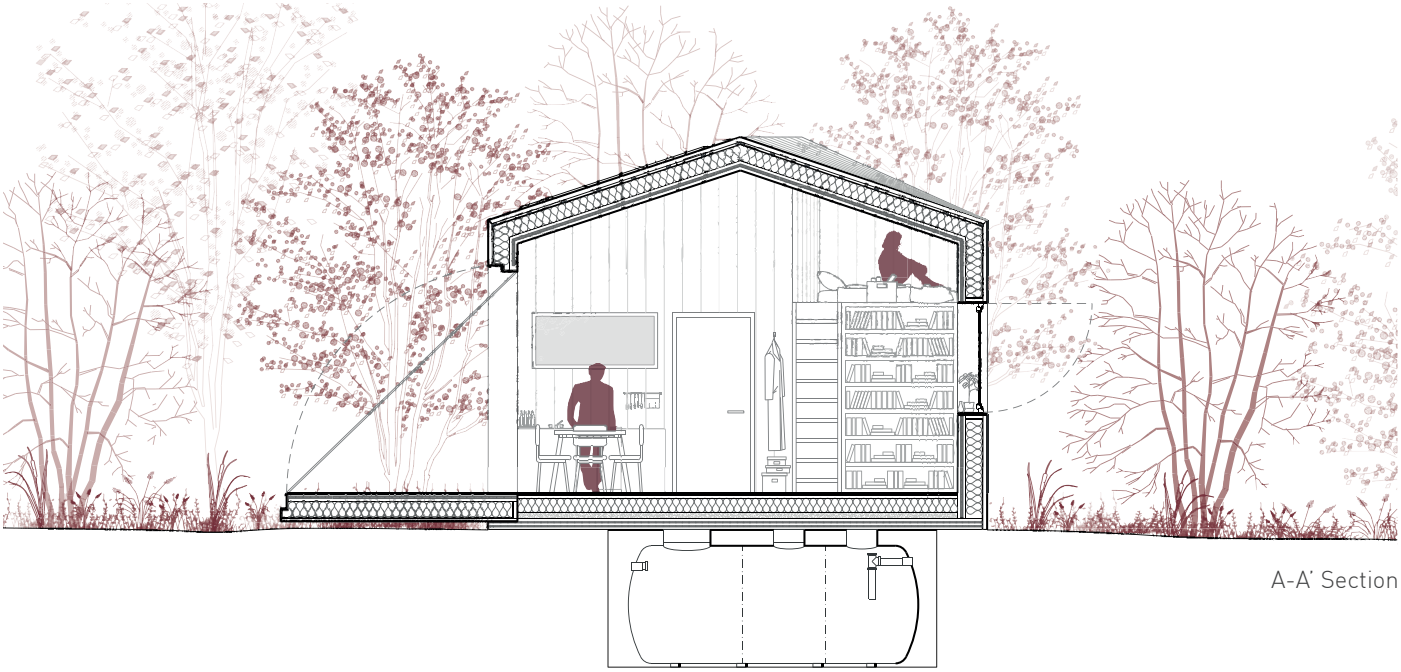
Located in the nothern part of Denmark, the main obective of this course was to project a retreat for a writer, giving a great importance to the technical aspects of the construction and the design itself. Remote from society and close to nature, the cabin not only would create an optimal environment for the user, but would also take great advantage of the sources and opportunities of it's surroundings.

Taking as a reference and inspiration the water lillies from the lake, the concept of the cabin is based on an oppening structure. By designing a series of "petal" panels that the user will be able to raise or lower, the enviroment inside the cabin competly changes, allowing the user to feel all kind of emotions and experiences.
The use of natural woods for the exterior cladding, imitating the materiality and verticality of the forest, and the CLT panels for the structure will also increase the inmersion in nature of the user.

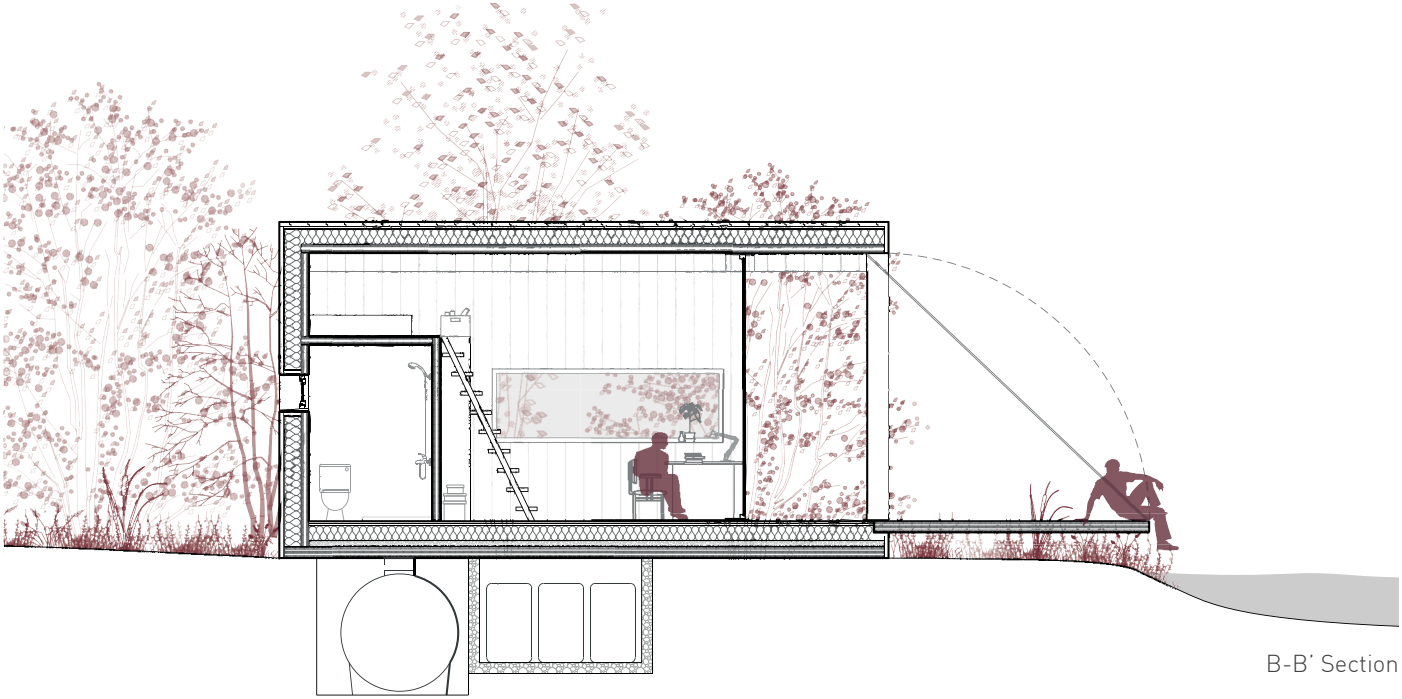




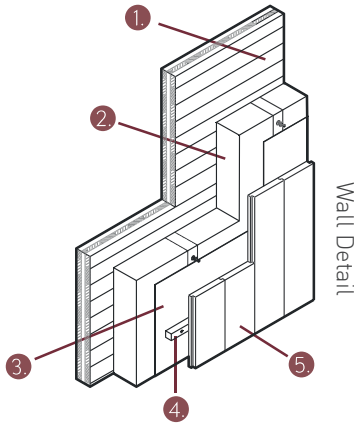
Floor Plan



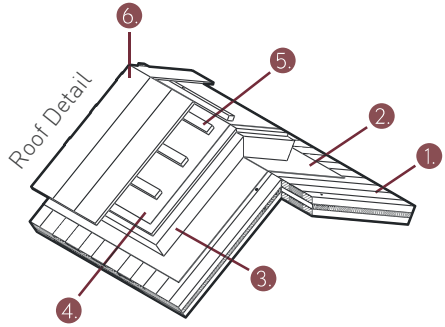
A-A' Section



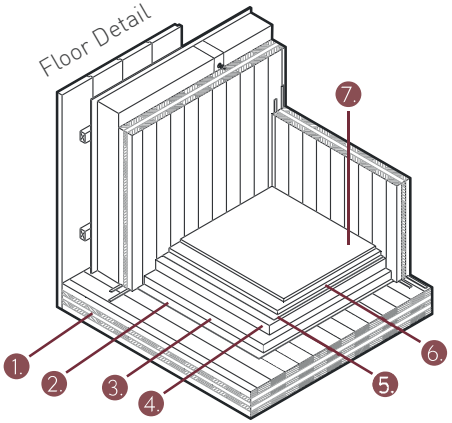
B-B' Section



Wall Detail



Roof Detail



Floor Detail

Cabin Image

0.2
DRÅBEN

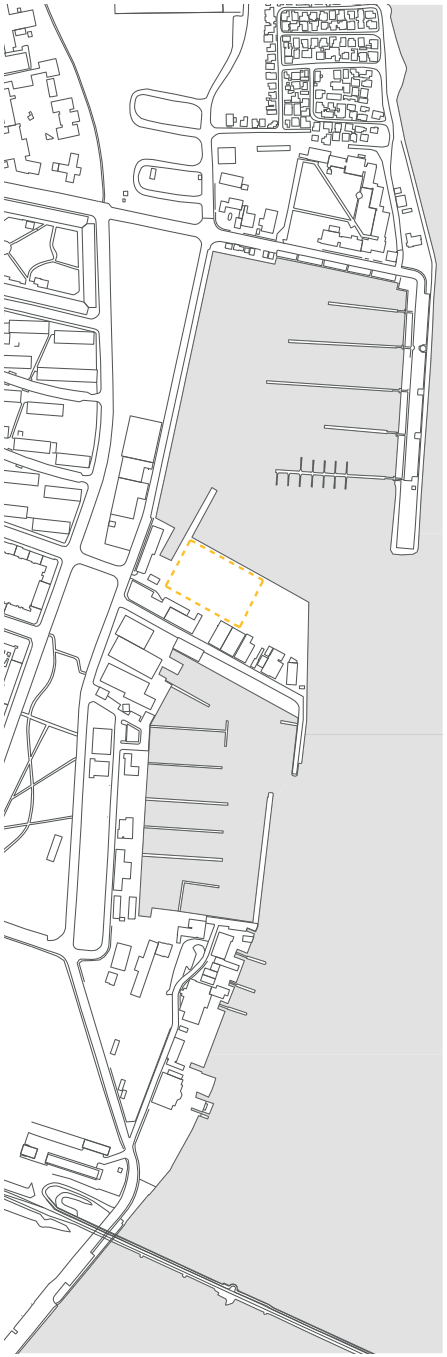
AALBORG UNIVERSITY
DENMARK
Exchange program
2 months project

INTEGRATED DESIGN

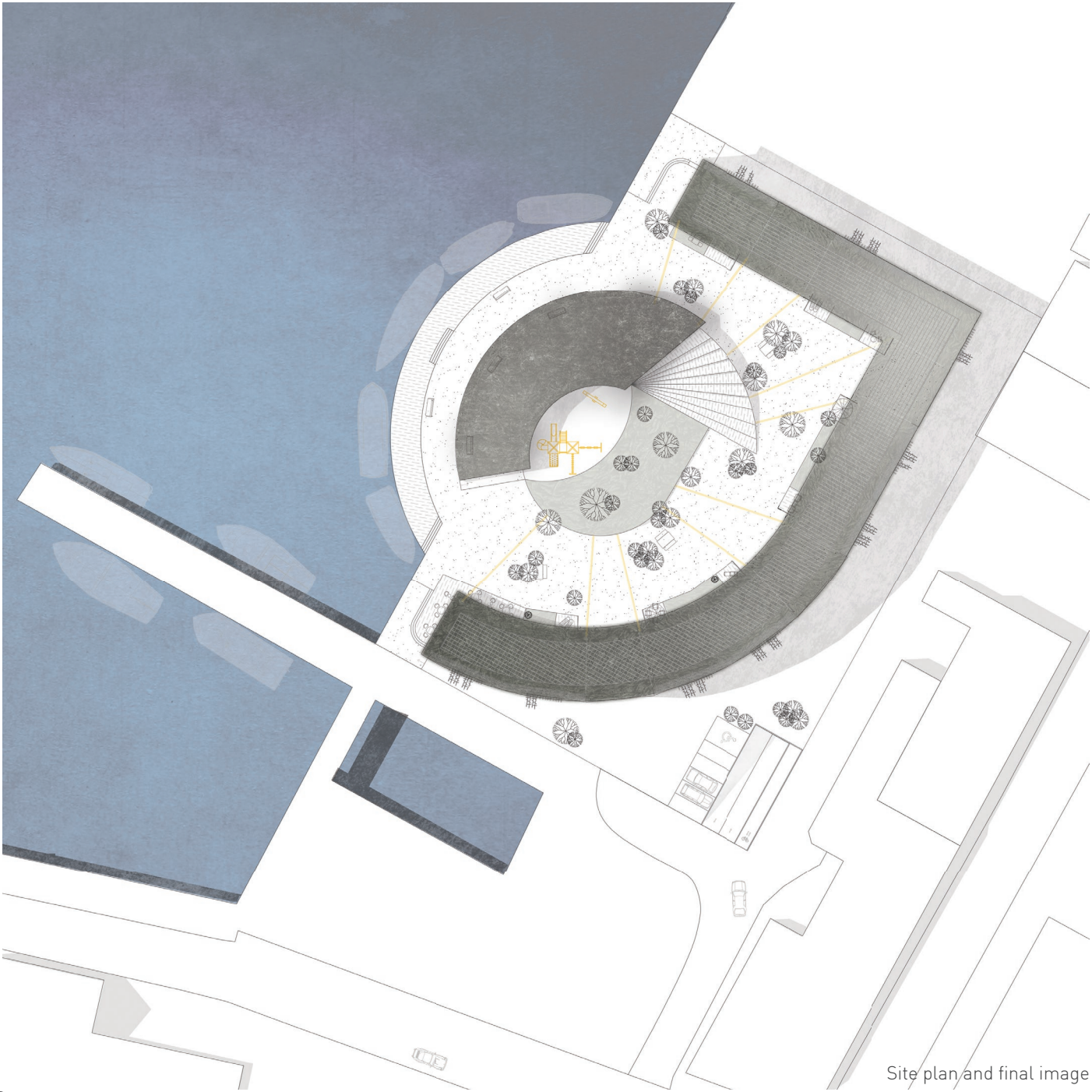
Made with:
Christine Delgaard
Christine Damlund
Cora Aspen
Nina Wikkelsø

Dråben is a project that took place during my exchange semester in Aalborg, where, as part of a group project, learning to work with my danish groupmates and applying their way of thinking to myself was crucial for the project.

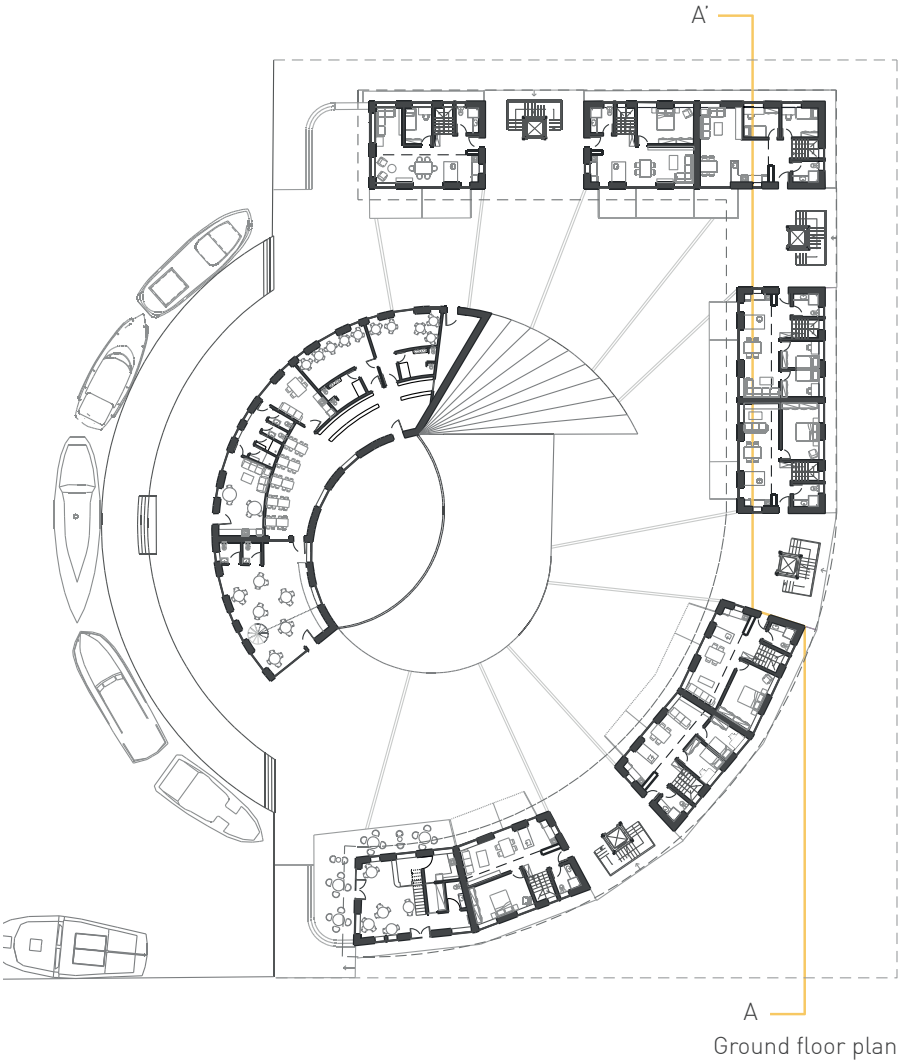
The new building complex, placed at the harbour of Aalborg, attracts visitors through its contrasting form. Inspired by the gathering and surrounding circle, the shape becomes a twist on its rectangular context. The sloping roof rises towards the Northeastern corner and reaches out to the newer buildings along the fjord. At the same time, it slopes down to embrace the near context. Reused materials, rainwater and solar energy collection, as part of the concept of awareness of the climate, become essential in the design and experience of the project.



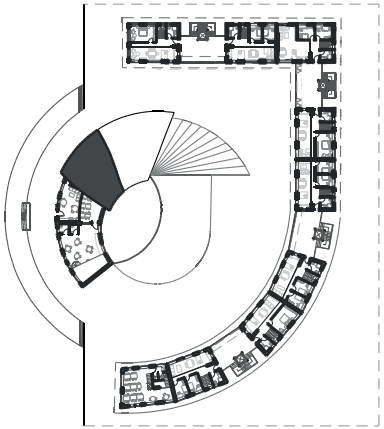
// GROUP PROJECT



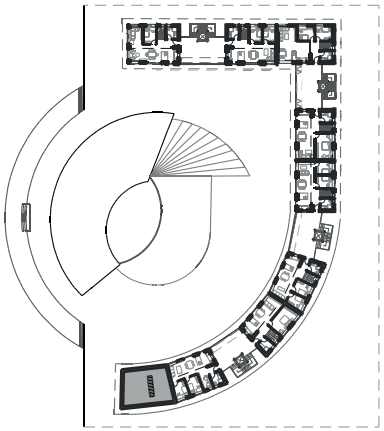
Site plan and final image



Ground floor plan



First floor



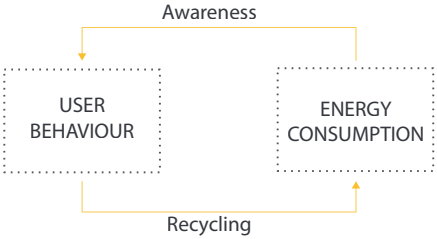
Second floor

Section A-A'

In terms of reducing energy consumption in the building industry, it is essential to build more environmentaly friendly buildings, but that is not enough. A lot of the new low energy buildings use more energy than they are intended for when not used and lived according to how it was expected.

Therefore the **user behaviour** needs to be taken into consideration at the start of a design process, and initiatives to lower the energy consumption from the user's perspective should be incorporated.

Creating a design which generates awareness around the climate problem. and incorporates solutions which are sustainable for the building and that aware the users about reducing energy, water and waste consumption becomes one of the main objectives of this project.



User preferences diagram

Courtyard image during the evening

One storey apartment image

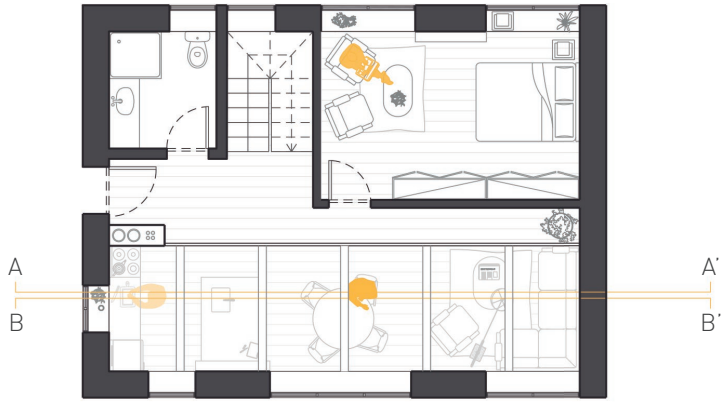
Two story apartment image

Section C-C'

One-storey apartment

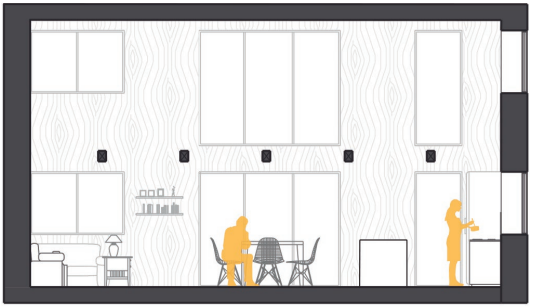
VR image of the two-storey apartment

Section A-A'

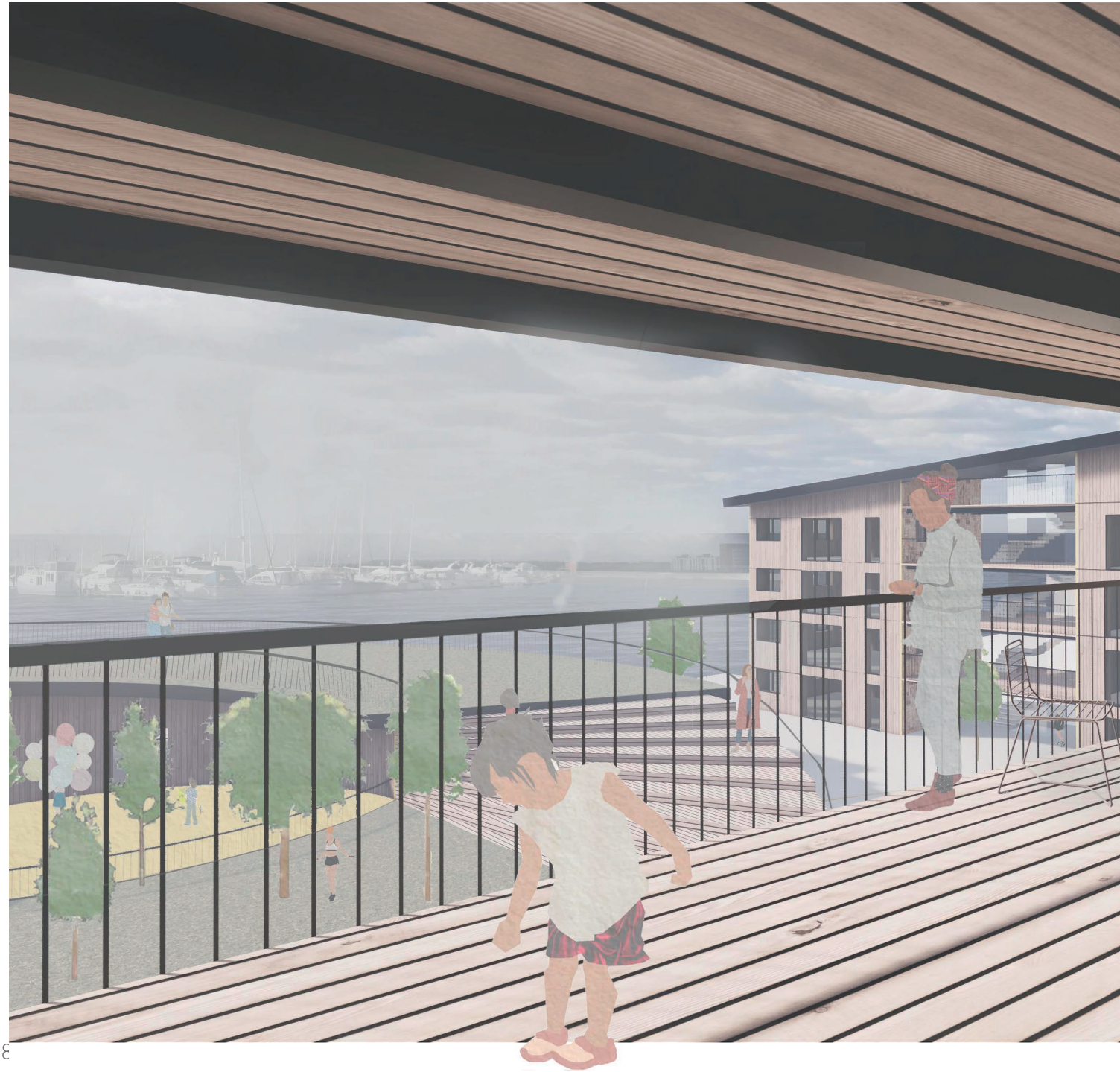


Two-storey apartment: first floor

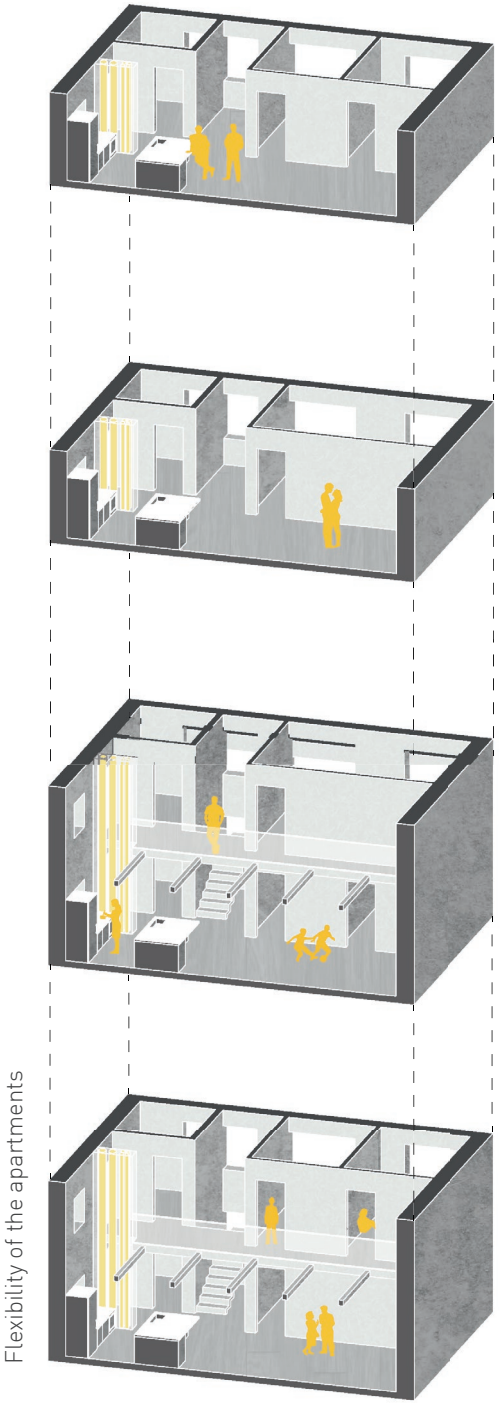
Two-storey apartment: ground floor



Section B-B'



Life in the terraces image



Flexibility of the apartments

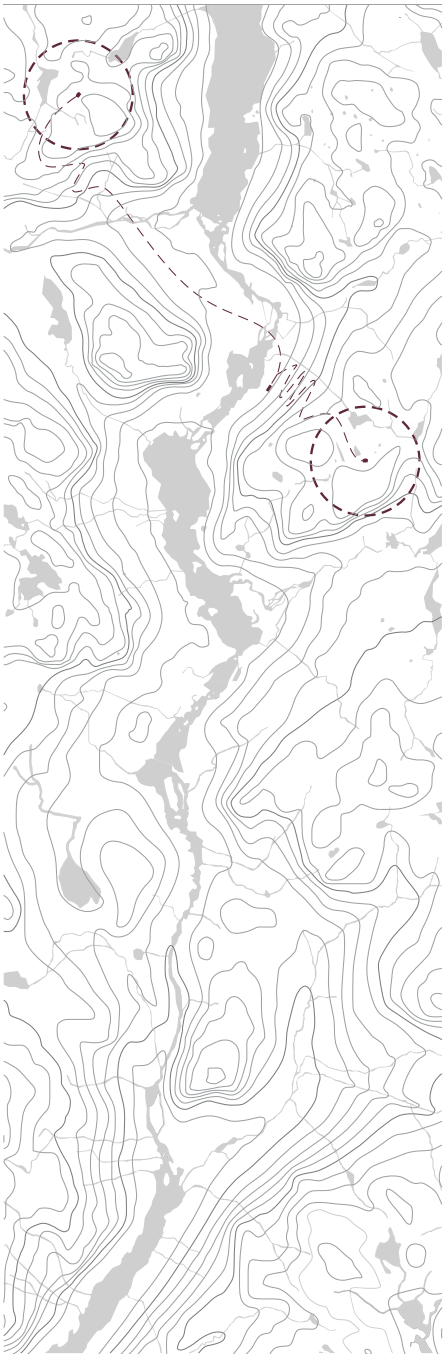
0.3
OBSERVATORY POST FIELD STATION

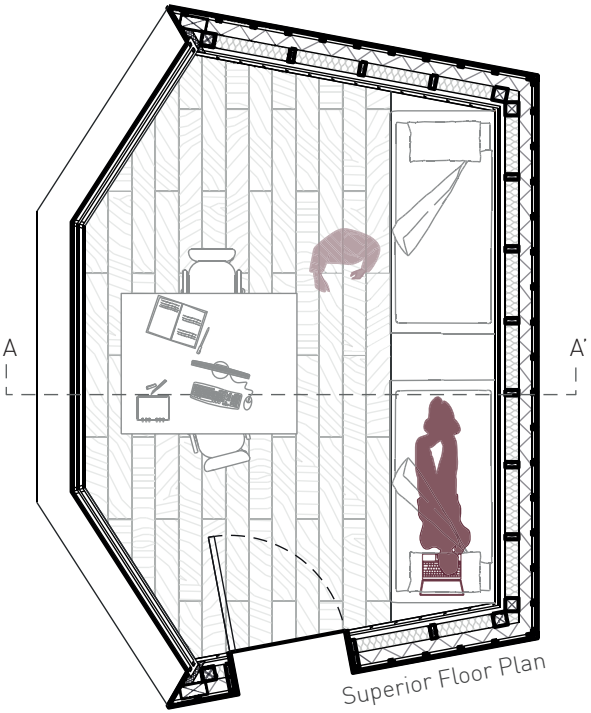
UNIVESRITY OF ILLINOIS
UNITED STATES
Exchange program
3 months project

INTEGRATED DESIGN

This project challenged us to design a Field Station dedicated to the study and realization of a research of our election. This offered me for the first time during my studies the opportunity of choosing not only the emplacement of the project, but also the kind of architecture I wanted to experiment with. That was the reason I decided to choose the Hardangervidda National Park, located in Norway, as it allowed me to work in extreme climate conditions and therefore forced me to include this thoughts in the whole design process.

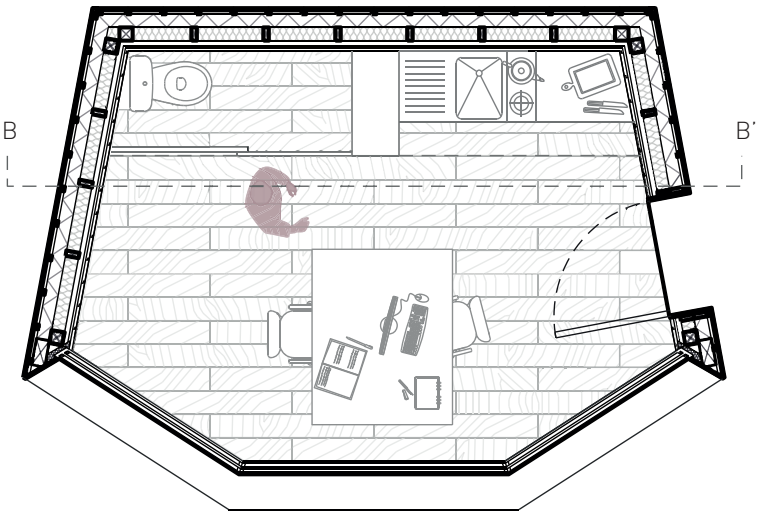
The project consisted in two parts: a common building, with capacity for 16 researchers and an easier access; and the observation posts, explained in the next pages, which consist in small cabins located in different strategic points of the park with harder access, which would allow two researchers at the time to immerse in the landscape in order to be able to observe and study the wild reindeer of Norway.

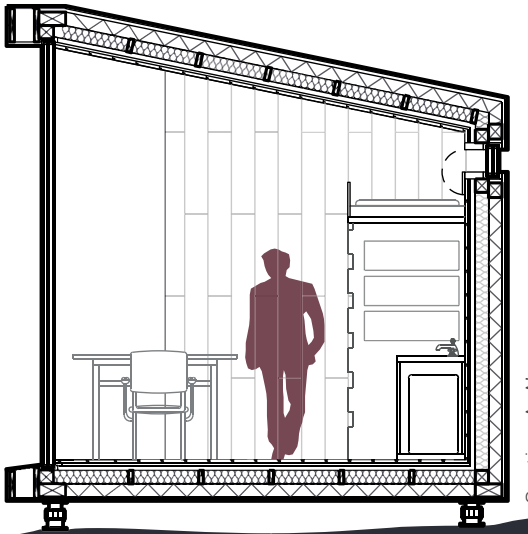




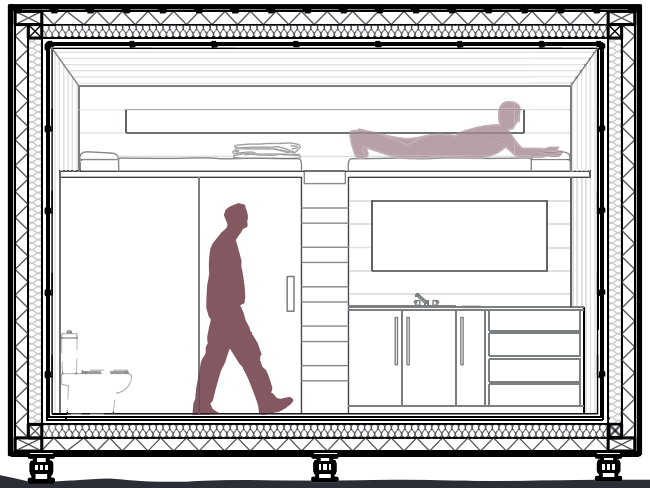
Superior Floor Plan

Inferior Floor Plan





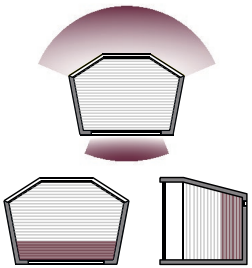
Section A-A'



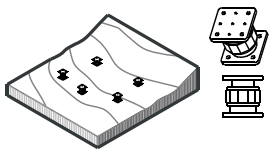
Section B-B'

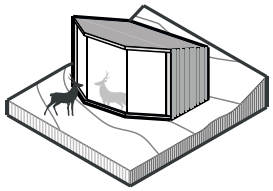
The Cabin Posts are at a one-day hike distance from the main living quarters and are designed to take two researchers at a time.

The shape is designed to open to the lanscape, offering the researchers a full perspective. By grouping all the life functions in one end we achieve a more efficient use of the space.

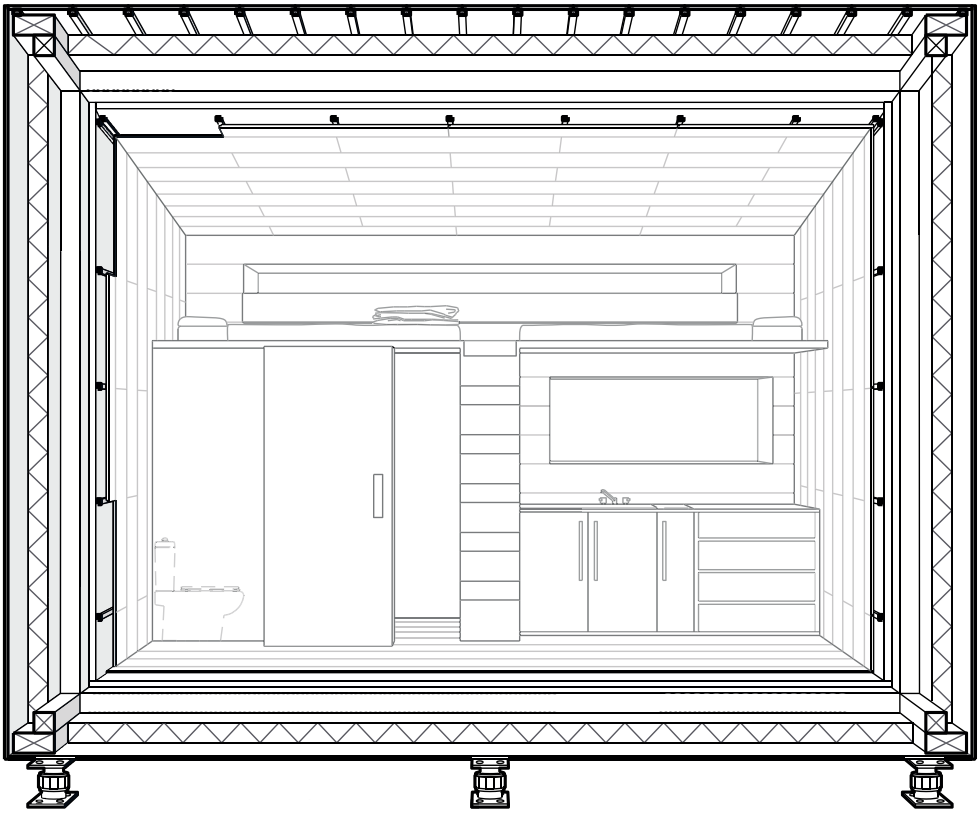


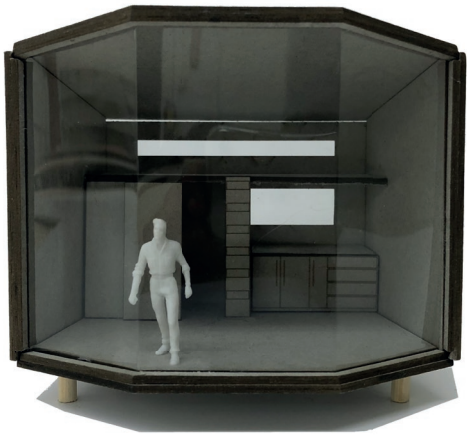
The irregular ground is prepared using adjustable legs, which allow us to level the floor with a minor impact in the landscape. The Cabin is then assambed and transported to the site.





Construction view





Pictures of the model scale 1.50

Side elevation

Back elevation

Front elevation

Final image of the cabin in one of the possible locations

0.4
CREATING CYCLES
25+

UNIVERSIDAD POLITÉCNICA
DE CATALUÑA - ETSAV
SPAIN
4 months project

SUSTAINABLE DESIGN

Made with:
Anna Jané Fonts
Clara Faccio

For this project we were asked to create housing in La Floresta, a neighborhood near Barcelona located in the limits of Collserola, a Natural Park also known as "the lung of Barcelona". But after analyzing the area we completely disagreed with the need of creating more houses there, as the area were it located is of extreme importance and therefore it needs to be conserved, not overbuilt.

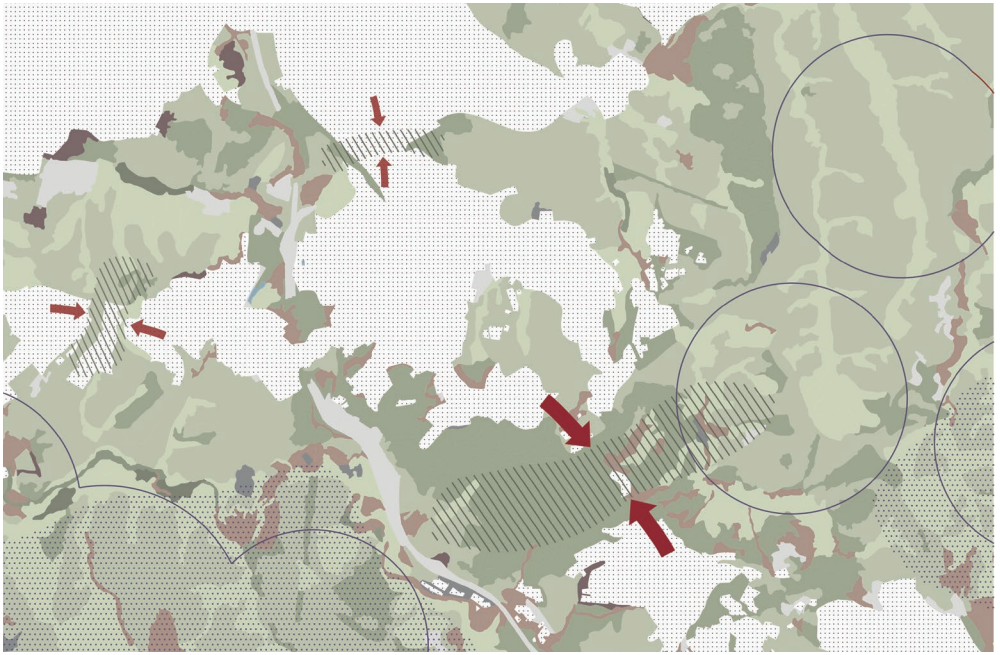
We still needed to increase the amount of housing opportunities, so we started thinking outside the box. The houses in la Floresta are known for being big, too big actually, and the biggest issue is that due to an old urban law, it is forbidden for an owner to divide the house in two or to share it. This creates a problem: big and empty houses, and families without a home.

We waned to allow more than one family to life in the same house, but to do so we needed to ensure the sustainability of the project, proving that with some modifications more people could life in the same house without augmenting it's consume. More demand, less consume.

Urban analisi

22a
20a/10
7b
20a/7
8b
8a
15
6b
27
9

Analisi of Collserola and it's more endangered spots



Urban pressure
Endangered bird area
Migratory route of birds
Connector interest area

Deforestation area
Dcidous tree forest
Thickets and weeds
Aciculifolis forest
Esclefofil forest
Crop fields
Urban area
Acuatic areas

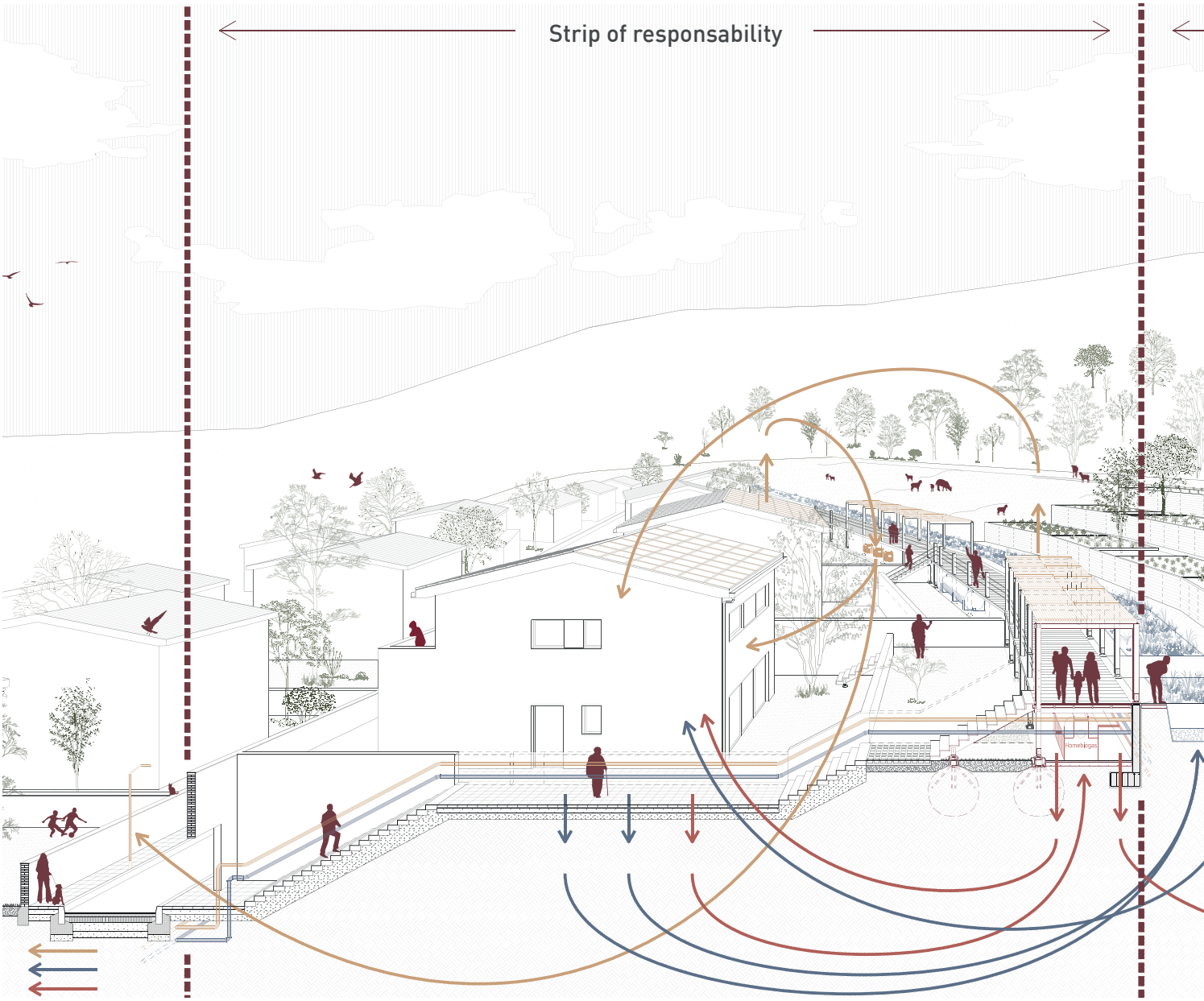
The natural park of Collserola and its limits

In a thickness of 25 meters towards the forest we find the strip of protection of urban areas in case of fire, with special requirements in terms of density of vegetation and constructions accepted. Although its reason for being is to protect the urban, we want to give it a retroactive character through promoting in this area the care and maintenance of the forest and activities that would take place in this first strip.

Then a second strip of forest care appears, of a thickness to be determined based on how much forest area a person can clean in a day.

There is a third strip of responsibility, located at the edge of the urban area and comprising the plots in contact with the forest. These citizens will be those who, organized in a cooperative, will be in charge of maintaining the two previous bands

Taking advantage of the limit with the park to create a system of sustainable cycles allow us to decrese the energy, water and resisue consumption, making possible for more than one family to share the same house without augmenting the consumption. Same consume. Same meters. More inhabitants.

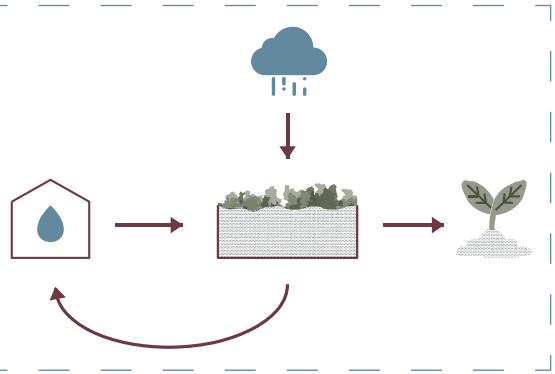


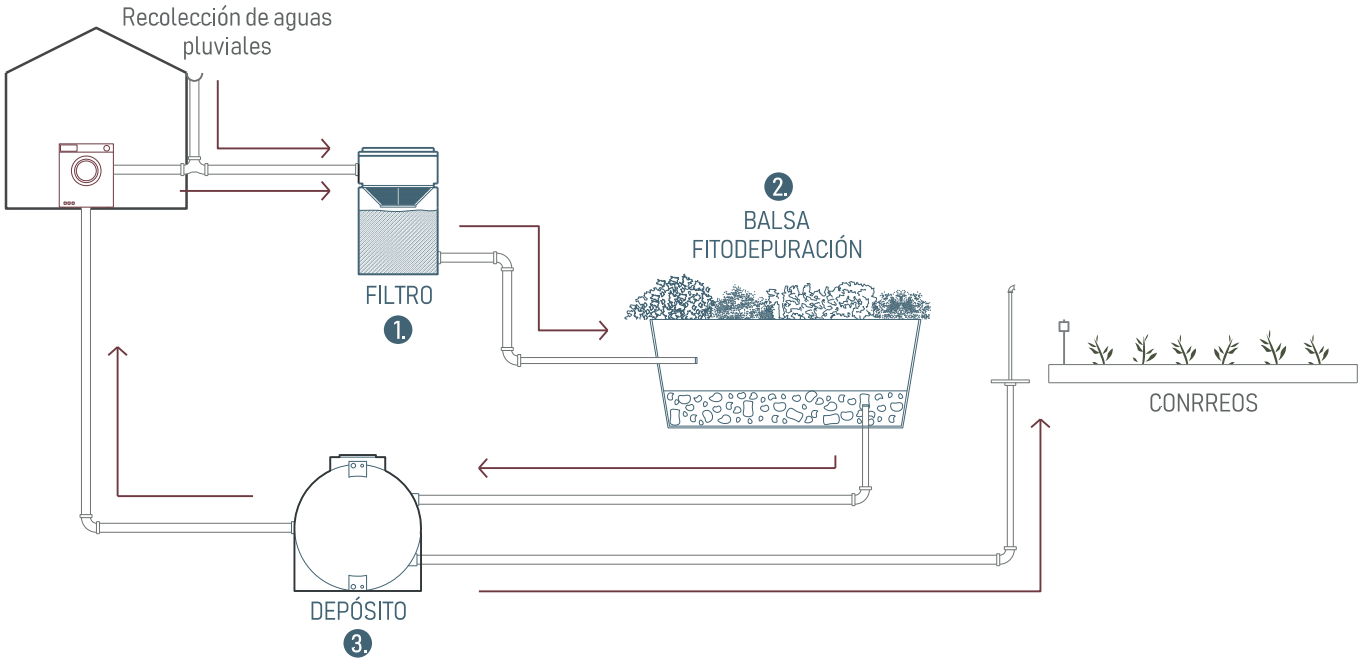
In this section the different cycles and methods used have been representing, using a different color to show each one of them. In the following pages you will be able to find a more detailed explanaition of this systems and how they imrpove the quality of life in La Floresta.

Water cycle

Phytodepuration

Phytodepuration is a completely natural water purification system that uses some types of plants to perform its function. Thanks to the microorganisms that are formed in the purification well of the plant, a biochemical reaction is triggered that allows the purification of wastewater, without the need to install other mechanical systems. Once purified in a phytodepuration plant, in fact, the water is again reusable, since its bacterial load is restored within the limits established by law.





Phytodepuration consists of a water purification process through the chemical process of some aquatic plants.

1.

Gray and black wastewater from homes, as well as rainwater, is passed through a filter that prevents solid waste from passing through.

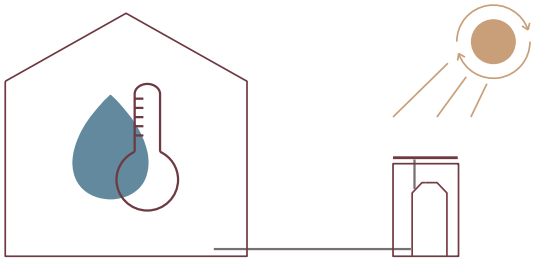
2.

Water reaches the phytodepuration rafts, where it is purified

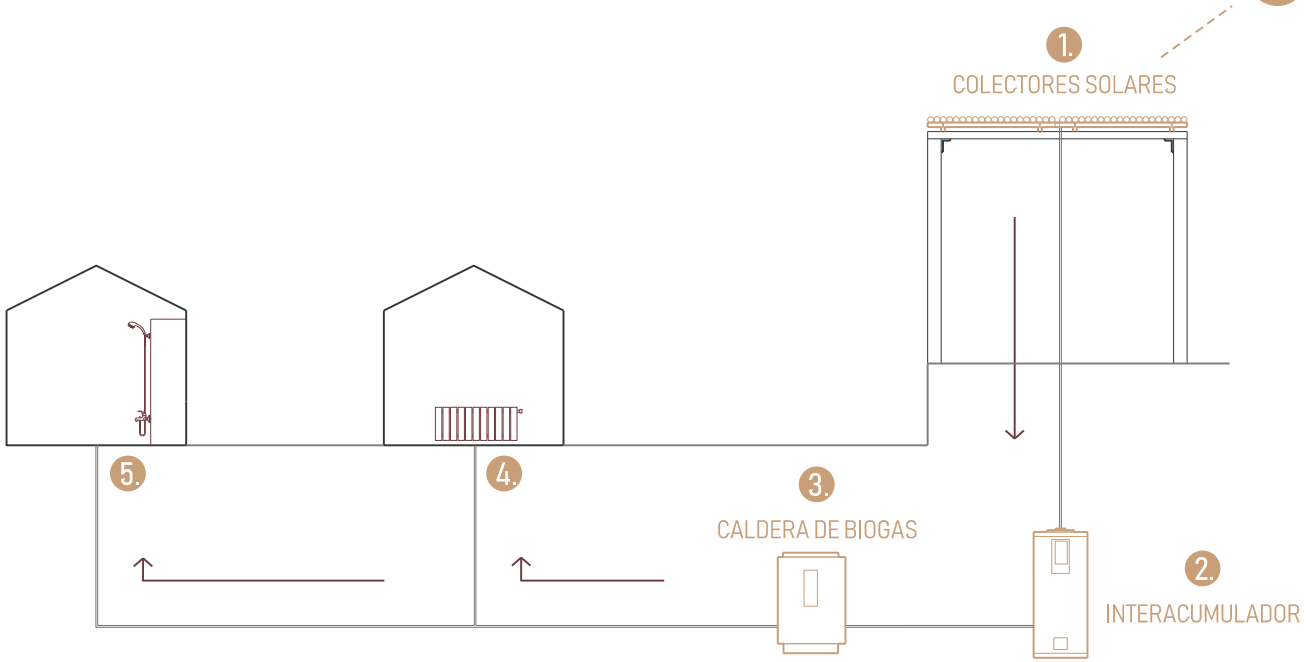
3.

The purified water is stored in tanks, being suitable for crops and domestic use

Solar cycle



Solar panel
A solar panel of vacuum tubes is a type of solar collector that takes advantage of solar thermal energy, formed by linear collectors housed in vacuum glass tubes. The vacuum tubes are composed of a double glass tube, whose walls make a very high vacuum which increases the absorption of radiation.
One of the great advantages of this type of system is that this type of panels works properly even on cold or cloudy days, ensuring its operation throughout the year.



1.
Using the energy from the sun, the solar collectors raise the temperature of the water travelling through their system.

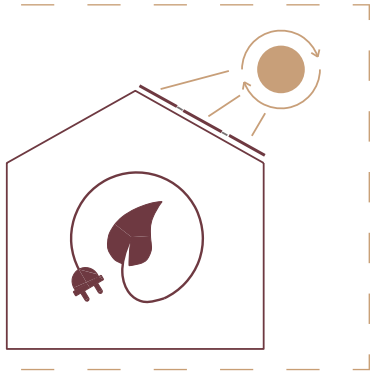
2.
This water passes through an inter-accumulator, where it is prepared to be used as ACS

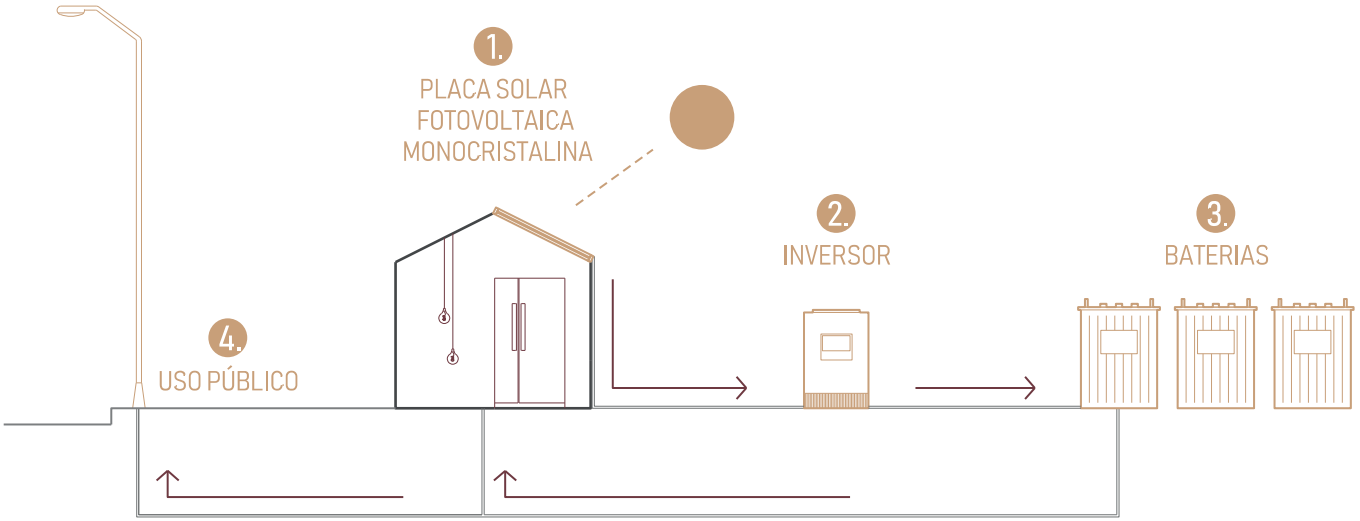
3.
A biogas boiler works as support for when the collectores are not enough

4.
This warm water is used to heat the dwellings with radiator systems and as hot water for the users

Solar cycle

Photovoltaic solar panels
Photovoltaic solar energy is based on the photovoltaic effect that transforms solar energy into electrical energy through solar cells.
It is one of the renewable energies with more future projection thanks to its technical simplicity. Solar cells are made of a semiconductor crystalline material that is capable of generating small amounts of electricity due to the flow of electrons from the interior of the materials and the potential difference. The cells react with both direct sunlight and diffused light so they can continue to produce electricity on cloudy days.





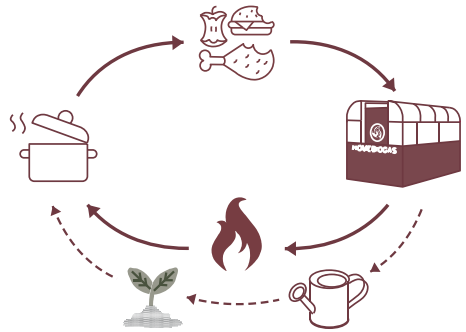
1.
Monocrystalline photovoltaic solar panels capture solar radiation thanks to the silicon cells that form them

2.
This solar radiation is transformed into electricity in an inverter

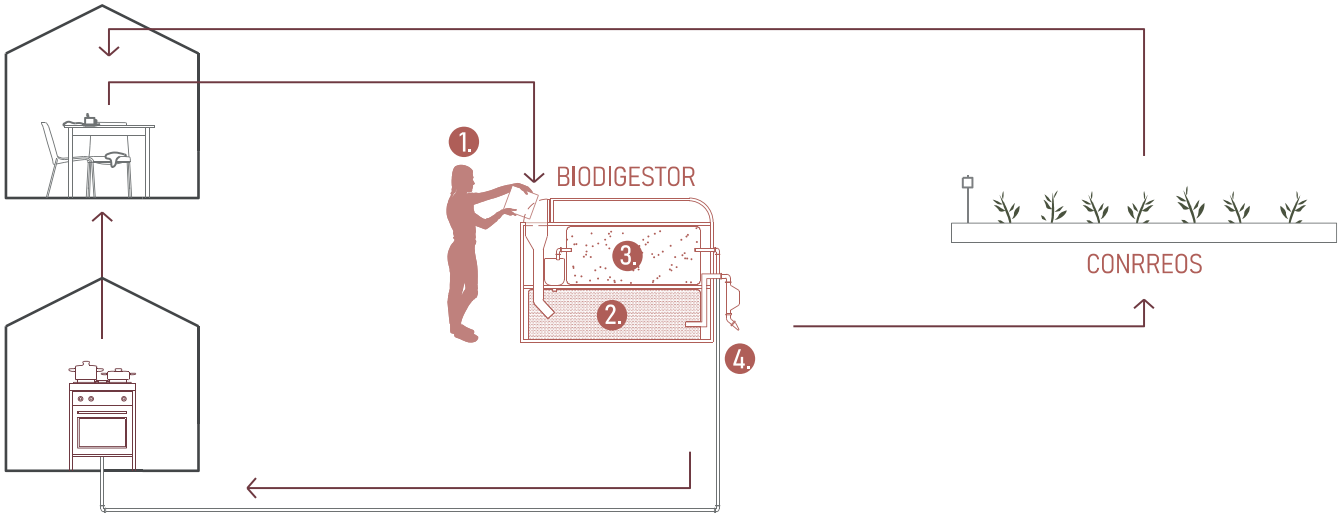
3.
Once the electricity is generated, it is stored in batteries for later use

4.
The energy obtained with the plates is distributed to the dwellings and other public elements beneficial to the community

Residue cycle



Homebiogas
This domestic digester allows the production of natural gas or domestic biogas, ideal for cooking, and also allows, as waste material, an excellent natural fertilizer for the garden. The biogas produced comes from a special tube that connects directly to a kitchen. It can produce 2-3 hours of biogas flame with the family's daily organic waste; On average, 1 kilo of food waste produces approximately 200 liters of gas, which is used for one hour of cooking over high heat.

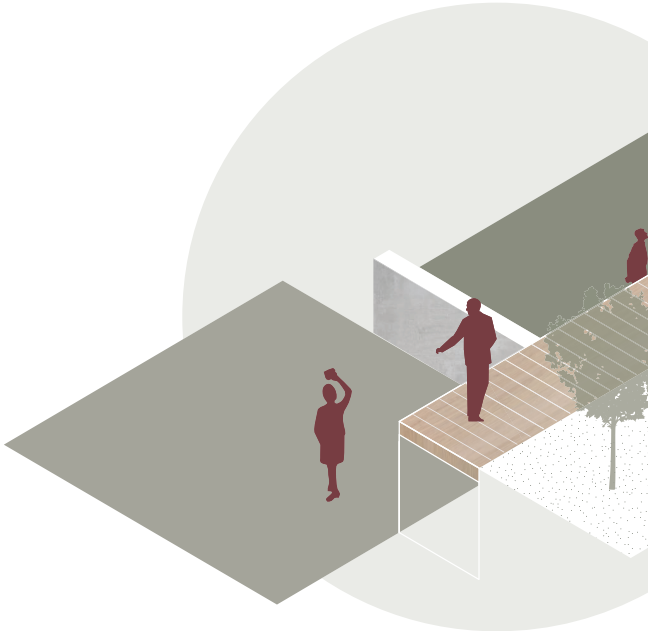


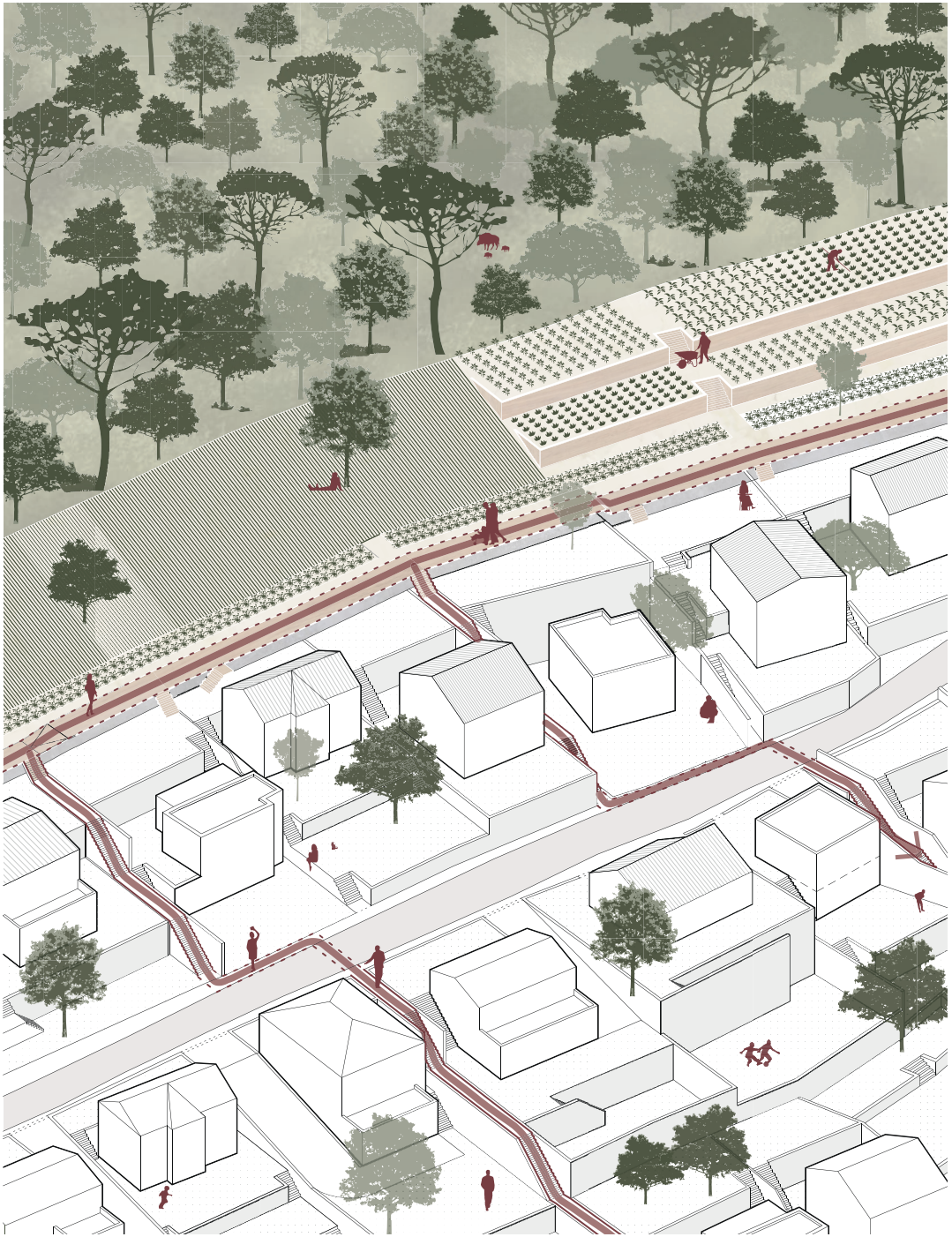
1.
Organic waste is deposited in the biodigester tank

2.
The bacteria in the tank digest the waste, creating biogas and fertilizer in the process

3.
The biogas is stored in a storage bag

4.
This biogas is taken to the kitchen of the house, while the fertilizer created will be used in the fields located on the strip





Final axonometry diagram

0.5
CANAL DEL PIRIGALLO PROYECTO BOLIVIA

BASE A ASSOSIATION
SPAIN - BOLIVIA

INTERNATIONAL COOPERATION

Made with:
Adria A. Barcial
Andrea Martín Garcés
Mercé Mullerat
Marc P. Pujol
Karla Subirana
Alex Clemente
Laura Collado
Ivan Horue
Marc Crespo
Erika Paz

Base A is a collective of young architects and students who perceive architecture as a tool for social transformation, performing activities in areas related to the construction, rehabilitation and urban planning from the viewpoint of sustainable and inclusive development. Most of the projects are located in Africa, but some are also taking place in Asia, South America and even Spain. Each project responds to a need and always takes into consideration the comunity, the peculiarities of the place and it's resources.

As a member of the "Bolivia" team, we have been working within a rural area of the country, which irrigation canal system was in terrible conditions. Through the study of the people, the place and it's characteristics we work weekly in presenting a viable proposal that would improve not only the irrigation system, but also de quality of the water and therefore, the quiality of life of the community.

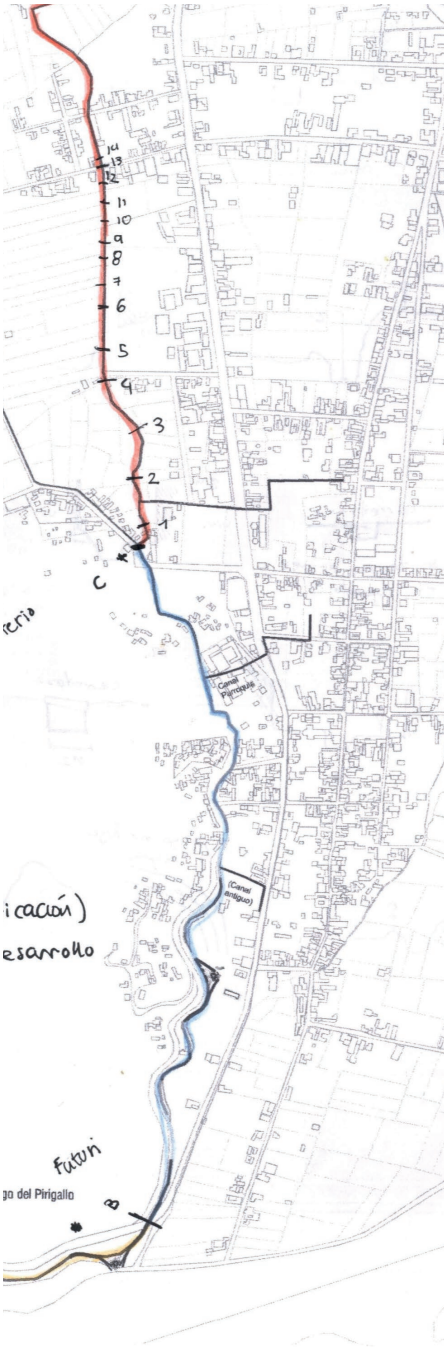


Image and plan of the valley of Capinota,
produced by some of the members of the team

THE VALLEY

Capinota is an area of great importance to Bolivia due to it's crops and it's irrigation system, as it is not only crucial for the fields, but also part of the heritage of the place. But ironically, it is also an area unknown and with few resources.

Due to the heavy rains that affect the area during the wet seasons, the condition of the canals is not the adequate, which is causing flooding and imposibilitating a good care of the fields. As part of the heritage of the country, our purpose it to understand, repair, conserve and protect the system, in the most efficient and sostenible way.

The project started in February 2019, when a group of 3 members of the Base A team travelled to Bolivia to be able to identificate the area, understand the problem, get to know the community and to start thinking about which interventions would be the adecuate ones.

THE "COMUNIDAD DE REGANTES"

This August I was able to travel to Capinota myself within three other members of the group, where the verification part of the project took place in order to ensure the continuity of the project.

One of the things I was able to comprehend is how important the comunication with the comunity is. The relation with the comunity is one of the main points of the working process of Base A. By having the people affected implicated in the project we can ensure it's success and continuity, as it will allow us to perfectly understand their needs, concerns and suggestions. That's the reason why we always stay with them during our visits, to be able to perfectly understand their point of view, to get in their skin and to become a part of their circle in order for them to trust us and to gain their confidence and help.






Portaitd of some of the members of "La Comunidad de Regantes"

Images taken during the verification of the canals with the comunity

0.0
ANDREA GONZÁLEZ FÀBREGAS

CURRICULUM VITAE

I have been lucky enough to have the chance to travel a lot throughout my life and to live in different countries, learning form each and every culture and place while always keeping my roots clear.
I'm made out of each of every experience I've gone through and every landscape I've been at, what has allowed my vision of the world and of architecture to constantly change and grow, building myself brick by brick.

LANGUAGES

C2	C2	C1	A2	A0
Spanish	Catalan	English	French	German

2013 - Certificate in Advanced English by Cambridge Exam - C1

2018 - Toefl Exam in English by ETS - Score 112

2019 - Currently coursing an A1 course of German at Deutsche Akademie

SOFTWARE

95%	95%	90%	70%
MicroStation	Microsoft Office	PhotoShop	InDesign
60%	**60%**	**50%**	**10%**
Illustrator	LightRoom	Daylight Visualizer	ArcGis

DATOS DE INTERES PERSONAL

Fall '19 - Current

Rugby - Entrenadora equipo Sub10

Club de Rugby Sant Cugat

Entrenadora del equipo de Sub10

Fall '12 - Current

Rugby - Senior femenino

Club de Rugby Sant Cugat

Parte del equipo de rugby del Club de Rugby Sant Cugat en liga a nivel nacional

EDUCATION

Fall '14 - Current

Escuela Técnica Superior de Arquitectura del Vallés
Spain - Barcelona
Degree in Architecture Studies

Fall '18

Aalborg University
Denmark
Erasmus Study Abroad Program
Master program specialized in Sustainable Architecture and Technology

Fall '17 - Spring '18

University of Illinois at Urbana - Champaign
United States of America
Study Abroad Program
Master program of Architecture, specialized in Detail + Fabrication and Urbanism

EXPERIENCE AND FORMATION

2019 - Current

BASE A
Spain - Barcelona
Member of the international cooperation team of young architects implementing a project in Capinota, BOLIVIA.

Summer '19

BASE A - Verification trip and Workshop
Bolivia
Member of the 4-people-team who travelled to Bolivia to verificate and ensure the continuity of the project about the irrigation system in Capinota.

Spring '19

Curso GIS
Spain - Barcelona
40 hours course in Geographic Information System (SIG), done at the Technical School of Architecture

Spring '19

Bioconstruction workshop
Spain - Barcelona
Workshop focused on the use of bioconstruction and sustainable tecnics in architecture.

SCAN ME

Andrea González Fàbregas

Architecture Portfolio